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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/081,992	02/21/2002	Been-Yih Jin	10559-587001 / P12768	1734

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EXAMINER

POMPEY, RON EVERETT

ART UNIT PAPER NUMBER

2812

DATE MAILED: 05/21/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/081,992

Applicant(s)

JIN ET AL.

Examiner

Ron E Pompey

Art Unit

2812

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 03 March 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-21 is/are pending in the application.
- 4a) Of the above claim(s) 1-7 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 8-21 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 8-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chen et al. (US 5,545, 574) in further view of Tobin et al. (US 6,376,349) and Eguchi (US 5,185,286).

Chen discloses the limitations of:

a semiconductor substrate, the substrate being substantially free of silicon (20, fig. 2);

a gate dielectric layer (24, fig. 2) formed over a portion of the substrate; and

a gate electrode, source and drain regions (26, 32 and 34, fig. 4) further comprising (col. 2, ln. 54 – col. 3, ln. 14): an interlayer dielectric layer (92, fig. 9) over the gate, source and drain (col. 4, lns. 31-35). Chen does not explicitly describe that the well and source and drain are different type of dopants, however it is inherent and well know that if you have an n-type of transistor that the well and source and drain regions are of different type dopants. Chen does disclose that the device formed is an n-channel device (col. 5, ln. 2).

Chen discloses the limitations of the claimed invention except, wherein the gate dielectric comprises a material having a dielectric constant greater than about 10 and

the interlevel dielectric defines first, second and third openings in the interlayer dielectric layer and further comprising: a metal within the first, second and third openings in contact with gate electrode, source and drain regions.

However, Tobin discloses the limitations of forming a gate dielectric with a dielectric constant greater than about 10 (col. 2, Ins. 41-50). Tobin shows that it is well known in the art to use high dielectric constant materials for gate dielectrics.

Also, Eguchi discloses the limitations of forming contacts to the device (col. 4, Ins. 30-36; 11, 12, 13 and 14, fig. 3). Therefore it would have been obvious to one of ordinary skill in the art to combine Eguchi with Chen, because the contacts allow for electrical communication to the MOS device from external devices.

Response to Arguments

3. Applicant's arguments with respect to claims 8-21 have been considered but are moot in view of the new ground(s) of rejection.

Applicant argues that Chen nor Eguchi disclose forming a gate dielectric with a dielectric constant greater than about 10, newly amended limitation. However, Tobin reference shows that it is well known to use high dielectric constant material when forming a gate dielectric layer. Also, Applicant does not argue the inherency argument given in the previous rejection, which was restated in this office action, therefore the inherency rejection is considered valid.

Conclusion

4. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP

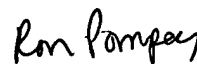
§ 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).


A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ron E Pompey whose telephone number is (703) 305-3016. The examiner can normally be reached on flex schedule.

The fax phone numbers for the organization where this application or proceeding is assigned are (703) 305-3432 for regular communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.


Ron Pompey
Art Unit: 2812
May 16, 2003


John F. Niebling
Supervisory Patent Examiner
Technology Center 2800